

Chapter 7:

Data Entry for Nutrient Analysis

Entering Food Items (Ingredients) into the Local Database

You will need to follow the directions provided for your nutrient analysis software to add a food to the local database. However, all data entry will have these steps (not necessarily in this order):

1. Obtain a nutrient analysis data sheet from the manufacturer or the Nutrition Facts label from product packaging for each food item used by the SFA that is not in the CN Database.
2. Assign each product an identification number (some software assigns identification numbers). You cannot use an identification number already in use by the CN Database. Enter the food identification number or use the number assigned by your software.
3. Enter the food name and food category.
4. Enter the manufacturer's name for purchased prepared products.
5. Enter the manufacturer's product code. (Some software programs have "note" fields where you can record a CN Label number, if appropriate, to further identify a product.)
6. Enter the serving size description, e.g., 1/2 cup (#8 scoop), 2.25 oz. patty, 2" x 3" rectangle, etc..
7. Enter the weight per serving in grams or ounces.
8. Enter the nutritive value of each nutrient.
9. Review data entry for correctness.
10. Save the data.

Additional Features:

12. To modify an existing food product in the database, retrieve the product from the database and repeat steps as needed. Only food items entered locally may be changed.
13. To delete a local food product from the database, follow the software instructions for deleting food products. Only food items entered locally may be deleted.
14. Print a ***Food Ingredient Data Report*** to list the food ingredient and all corresponding data—nutritive value, food ID number, food category, name, product code etc.
15. Print a ***Nutrient Composition Report*** to list food items with their associated nutrient values.

Recipe Nutrient Analysis

USDA-Approved Software Capabilities for Nutrient Analysis of Recipes

1. Access, search, retrieve and/or edit existing recipes in the local recipe file.
2. List all file recipes.
3. List recipes with corresponding data: Includes recipe number, name, ingredient, amount of ingredient, yield, portion size, etc.
4. List the nutrient composition of each food ingredient.
5. Sort recipes by food category such as Bread and Cereal Products, Soups, Sandwiches, Salad Dressings, etc.
6. List recipes by ingredients, e.g., all recipes containing apples.
7. Search for previously created recipes by recipe code number, recipe category and recipe name.
8. Adjust recipe yields.

For example: The recipe yield is 100 servings; if the servings are adjusted to 200 servings, the computer will calculate the amount/measures of food ingredients required to produce 200 servings.

How the Software Calculates the Nutrient Analysis of Recipes:

When recipes are entered into the database, both a serving size and a recipe yield (the number of servings a recipe makes) are entered. It is important to know that the nutrient analysis software calculates the nutrients in a serving based on the number of servings in the recipe (the yield), not based on the size of the serving entered. In addition, the nutrient analysis software will calculate the gram weight of one serving. (Some software programs also calculate the weight of one serving in ounces.)

If the recipe has been entered accurately using the Yield Factor Method, the gram weight of one serving as calculated by the software should be close to the average actual gram weight of one serving.

Cross-checking Recipes for Possible Errors

The comparison of the gram weight of one serving as calculated by the computer with the average gram weight of one serving can be used to cross-check a recipe for possible errors. It is expected that there will be some variation in the two weights—remember that nutrient analysis is not an exact science and moisture loss may not always be accurately reflected; but a significant discrepancy between the two weights may indicate one of the following: (1) that there is an error in data entry, (2) that the recipe has not been standardized and either the yield or the serving size is inaccurate, or (3) that the Yield Factor Method has not been followed.

If the recipe is portioned using a scoop or measuring spoon, you probably do not know the weight of an average serving. The following procedure can be used to calculate the weight of one serving of a recipe:

- Prepare the recipe and carefully portion out 5 servings.
- Using a gram scale, weigh each serving.
- Add the serving weights and divide the total by 5. This will give you an "average" serving weight.
- To get a better estimate of true serving weight, 2 persons should do the portioning and weighing of 5 samples each.

Adding a Recipe to the Local Database for Nutrient Analysis

You will be able to enter local school recipes into the local database recipe file. You must follow your software directions. Regardless of which software you use, all of these steps are needed to add a recipe to the local database.

Steps to Enter a Local Recipe

1. Enter recipe category, code number and name.
2. Enter recipe yield or number of servings produced (e.g., 100 servings).
3. Enter the serving size description, e.g., 1/2 cup (#8 scoop), 2.25 oz. patty, 2" x 3" rectangle, etc. .
4. The Yield Factor Method will be used for all standardized recipes for data entry for nutrient analysis. This requires that each recipe ingredient be entered as ready to serve or cooked, and the amount of each ingredient calculated as a yield from the *as purchased* or raw weight, using the USDA *Food Buying Guide*. See pp. 54-60 for more information on the Yield Factor Method.
5. View the food ingredients listed in the database. Select the correct food item and amount from the database that corresponds with the food ingredient in the recipe according to the directions for the Yield Factor Method.
6. Enter preparation directions, if desired.
7. Review the data entered against the recipe to be sure that (a) the yield is correct, (b) the serving size is correct, (c) all ingredients are included, (d) the correct food item has been chosen from the database, and (e) the amount of each ingredient is correct.
8. Save the recipe to the local database recipe file.
9. Complete a nutrient analysis of the recipe and review the nutrient composition. The following will be calculated for each recipe:
 - The gram weight of one serving
 - Calories
 - Protein
 - Carbohydrate
 - Total fat

- Saturated fat
 - Vitamin A
 - Vitamin C
 - Iron
 - Calcium
 - Percentage of calories from protein
 - Percentage of calories from carbohydrate
 - Percentage of calories from fat
 - Percentage of calories from saturated fat
 - Cholesterol
 - Sodium
 - Dietary fiber
10. Compare the gram weight calculated for one serving with the average gram weight of one serving. (See the section on ***How the Software Calculates Recipes*** on pp. 66-67 for more information.)
 11. Print the recipe, preparation instructions (if applicable), and nutrient analysis.

Updating Local Recipe Data

When local recipes are entered and saved to the recipe file, you can:

1. Change, add or delete food ingredients and amounts.
2. Change preparation and/or serving instructions.

Steps to Create a Recipe Variation

When changing a local database recipe, you may modify the original recipe and then resave it. If you want to keep both recipe variations, you may copy the original recipe, make changes, rename, and save the recipe.

USDA Recipe Variation for Optional Ingredient(s)

When the school district is preparing a USDA recipe exactly as written with the exception that they are simply adding an ingredient(s) that is listed as “optional” in the recipe (e.g., adding the optional ingredient, raisins, to Applesauce Cake), a new recipe should be created and named:

For example: **Applesauce Cake with Raisins**

USDA Recipe C-3

To prepare a recipe for 100 servings, enter item 50043 which is the CN Database number for the USDA recipe for Applesauce Cake; list the amount as 100 pieces. Then choose

item 09300, Raisins, seedless, plumped; and enter 2 lbs. which is the amount to be added for 100 servings. Using this procedure for adding an optional ingredient decreases data entry and takes advantage of the USDA nutrient analysis of Applesauce Cake.

USDA Recipe Variation for Alternate Ingredient(s)

When the school district prepares a USDA recipe using an alternate ingredient(s), you will need to create a new recipe by entering the ingredients and their amounts and saving it as a different recipe; *or*, if the software company has entered the USDA recipes with their ingredients, you will copy the appropriate USDA recipe, review it carefully for accuracy, change the ingredient(s) and/or amount(s) as needed, and name and save it as a different recipe.

Creating a Theme Bar Recipe

Salad bars and other food bars, such as pasta bars, taco bars, deli bars, potato bars, etc. can serve as the complete reimbursable lunch or as a food or menu item which is part of the reimbursable lunch. The nutrient analysis of the food bar is based on historical usage of food bar items.

Standardized recipes are developed for food bars and are entered into the database at the local level. The recipe should be constructed based on a “typical” day.

To develop the standardized recipe for a food bar:

1. the number of servings the recipe produces would be the number of people who use the food bar, regardless of whether by students for reimbursable meals, by adults, or for a la carte sales
2. the serving size would be entered into the computer as “one serving”
3. determine the amount of each of the food ingredients for the recipe using the following steps:
 - determine the amount of each ingredient placed on the food bar on a typical day (the amounts placed on the bar at the beginning of the meal service plus any additions to the bar during the meal service)
 - determine the amount of each ingredient left over on the food bar at the end of the meal service

- subtract the amount left over from the amount placed on the food bar for each ingredient to determine the amount of each ingredient to enter for the recipe.

Once the recipe has been developed and entered into the database, it can be used in planning and/or analyzing a day's menu. The number of servings entered into the menu for nutrient analysis would be the estimated number of students who are expected to select a reimbursable meal from the food bar (or the estimated number of servings of the menu item which will be selected as part of a reimbursable meal, if the food bar does not offer a full meal).

A separate recipe should be developed for each variation of the food bar. For example, if you rotated 2 salad bars, one that featured iceberg lettuce and another that featured fresh spinach, two separate recipes would need to be developed. If other ingredients vary, each separate combination would need a separate recipe.

Creating Recipes for Fried Purchased Prepared Products

For food products used by the school that are not in the CN Database, school districts will need to obtain manufacturer's nutrient analysis data sheets or use a Nutrition Facts label on the product packaging and enter the nutrient data into their local database. (Manufacturers of quantity foods are not required to provide a Nutrition Facts label, but many have chosen to do so.)

Manufacturers provide nutrient analysis information in one of two ways: either it is "as purchased" data or it is "as served" data.

- **"As purchased"** - "As purchased" nutrient analysis data is information on the nutritional content of a weight and/or a volume or other measurable amount of the product exactly as it is purchased, that is, the nutrients contained in a certain amount of an unprepared cake mix or an unbaked prepared pizza or prefried egg roll.

The "Nutrition Facts" labels on products are required to provide "as purchased" data. For products which are served as they are purchased, i.e., products which don't have any further preparation other than chilling, heating and/or portioning, this data should be

entered into the database and used “as is” in the nutrient analysis of the menu.

For purchased prepared products which will be deep fried in the school kitchen, you will need to prepare a recipe which will adjust for moisture losses and fat gains that will occur with frying (unless the manufacturer has provided “as served” data using the method of cooking and/or other preparation that will be used in the school kitchen). The database code for the type of fat used in frying will also need to be entered.

See Appendix A on page 79 to obtain common moisture losses and fat gains during deep-frying, and incorporate this information into the recipe. Assume zero (0) moisture/fat change for food items that are only heated/reheated.

The following is an example of how this information would be used in the nutrient analysis:

School District A purchases a frozen fish portion which will be fried in the school kitchen. They will need to prepare a recipe for the fish portion and have the computer adjust the “as purchased” nutrient analysis information for moisture loss and fat gain using the appropriate percentages of moisture loss and fat gain in Appendix A. They will also need to know and enter the type of oil that will be used for frying so that the fat gain will be accurately reflected.

- **“As served”** - “As served” nutrient analysis data provides the nutrient values of a purchased prepared product after it has been further prepared. For example, a cake mix will provide “as purchased” data on the unprepared mix and may also provide “as served” data on the mix when prepared according to package directions.

When “as served” nutrient analysis information is provided and the school food service prepares the food according to the specific method of cooking or other preparation described for “as served,” the nutrient data provided may be used for menu analysis. When the method of cooking or other preparation differs, a new recipe must be entered into the computer for the prepared product.

Creating Recipes for Standardized Choices

Many school districts have standard choices for milk which do not vary from one meal to the next, and student milk preferences are also consistent. In those circumstances, a recipe can be created for milk choices.

The use of the standardized recipe will reduce the amount of data entry for each menu: instead of entering each type of milk and the number expected to be selected for reimbursable meals, the recipe can be entered along with the total number of milks expected to be selected for reimbursable meals.

The recipe must be based on the choices of milk available and the percentages chosen (if weighted averages are used). If the SFA plans central menus, it would be based on district-wide preferences; if individual school menus are planned, the recipe would be based on the usage in that school. If simple averaging is used, the recipe would give equal weight to each of the choices.

For example: the Central City School District plans central menus and uses weighted averaging. Four kinds of milk are offered every day: whole milk, lowfat milk (1%), chocolate lowfat milk (1%), and nonfat milk. During the past year, 12% of the district purchases of $\frac{1}{2}$ pint cartons were whole milk, 57% were 1% chocolate lowfat milk, 21% were 1% lowfat milk, and 10% were nonfat milk. The Milk Variety Recipe was created as follows:

For 100 servings:

- 12 - $\frac{1}{2}$ pints whole milk
- 57 - $\frac{1}{2}$ pints 1% chocolate lowfat milk
- 21 - $\frac{1}{2}$ pints 1% lowfat milk
- 10 - $\frac{1}{2}$ pints nonfat milk

If Central City School District used simple averaging and offered the same four kinds of milk, the Milk Variety Recipe would be as follows:

For 100 servings:

- 25 - $\frac{1}{2}$ pints whole milk
- 25 - $\frac{1}{2}$ pints 1% chocolate lowfat milk
- 25 - $\frac{1}{2}$ pints 1% lowfat milk
- 25 - $\frac{1}{2}$ pints nonfat milk

If the standard kinds of milk offered changes, or if the district uses weighted averages and the proportions selected by the students change, then a new recipe must be created.

Other recipes for standardized choices can be created if the items offered do not vary and student choices are consistent (for districts using weighted averages). Some examples of menu items offered as standardized choices by some school districts include fruit juices, fresh fruits, cold cereals, and breads.

Entering Menu Plans

Enter Specific Menu Plan Data

Site

The site refers to the group for whom the menu is being planned. It may be a school or a group of schools with the same menu:

- Central City Elementary Schools
- Lincoln Elementary School

Date

The date the menu will be served is entered to identify the menu for future reference.

Menu or Meal Type

The type of meal to be planned must be entered because there are specific program requirements for each meal:

- Lunch
- Breakfast

Cycle

A cycle may be one or as many as eight or more weeks. A cycle is a series of menus that are repeated. The software allows entry of the cycle, the cycle week, and the cycle day. The software will also compute the calendar day (Monday, Tuesday, etc.) from the menu date.

- Fall Cycle, Number 2, Weeks 1-4
- Elementary Cycle, Weeks 1-5

Week

A week for nutrient analysis purposes is 3-7 consecutive days. If there are fewer than three consecutive days in a week, the days in that week are combined with the subsequent or previous week for analysis.

Grade or Age Group

The grade group or the age range is entered to identify which nutrient standard will be used as the yardstick to measure success, such as:

- Grades K-6
- Grades 7-12
- Grades K-3
- Grades 4-12 (this standard is not yet available as a choice in the software. See the instructions below for creating the standard with your software.)
- Ages 7-10
- Ages 11-13

Creating the Nutrient Standard for Grades 4-12 for the Traditional Meal Pattern:

USDA-approved software has not yet been updated to include the nutrient standard for grades 4-12 for the Traditional Meal Pattern. This will require using the software to create this standard. This is accomplished by using the feature for creating customized age-based nutrient standards. Create the standards using age 9 (the age for 4th grade students) through age 17 (the age for 12th graders). This standard will then be used to evaluate all meals planned using the Traditional Meal Pattern for Group IV (Grades 4-12).

Total Reimbursable Meals

Enter the total number of reimbursable meals which are projected to be served, such as:

- 500 Breakfast
- 1,000 Lunch

Use Food Codes or Search Feature to Select Recipes/foods from Database

The food code is the numbers or letters assigned to each food and recipe in the CN Database or the local database. USDA-approved software systems will also allow the menu planner to enter the name of the food or recipe and the software

will **search** for similar foods and allow the menu planner to select the correct item.

Portion Size

The portion size must be specified for every food item and menu item. It must relate to the portion sizes available for the food item or menu item in the nutrient analysis software system:

- 1% lowfat milk, 8 fl. oz.
- Corn Flakes cereal, 1 oz.

Projected Servings

Enter the projected production (the projected number of servings that will be prepared for reimbursable meals for each menu item).

Field trips

For NSMP, guidance states that menus for field trip lunches are averaged into the week's menu analysis just as if they were meals served on a school campus, i.e., the menus for field trip lunches are to be incorporated into the menu analysis of the day they are served, along with the regularly scheduled menu items.

Many school districts that plan central menus are concerned that, because field trips are special events with only a relatively small number of students participating on any given day, the nutrients for those meals might get "lost" in the big picture. Another problem is that many schools are not notified about field trips more than 2 weeks in advance of the trip.

To help ensure that field trip meals are as nutritious as the other meals offered by the food service, the meal planner can create a separate menu for the field trip, analyze and compare it to the appropriate nutrient standard, and then adjust to provide a meal that comes as close to the nutrient standard as possible. Then the school food service could be assured that field trip meals would not get lost in the larger numbers. The meals would be nutritious, but would have little, if any, impact on the overall nutrient analysis.

Common Data Entry Errors

Errors in data entry of recipes:

- Incorrect food item selected from database

- Measurements wrong, such as, weight/volume errors, incorrect measures of food items, incorrect recipe serving sizes, incorrect recipe yield, etc.
- “As Purchased” weight used rather than “Edible Portion”
- Recipes entered have not been standardized *or* standardized recipes have been entered, but not used
- Food item (ingredient) left off of recipe

Reminders:

- Carefully select the correct food item from the database.
- Choose the correct measurement, such as volume or weight.
- Use cooked weight for cooked foods.
- Use only standardized recipes. Be sure that written recipes reflect all steps, e.g., make sure the recipe shows the added fat if butter or margarine is brushed on top of rolls.
- Before saving, recheck data entry to find errors.

Errors in data entry of menus:

- Incorrect food item/recipe selected from database
- Portion sizes wrong
- Planned production data (or appropriate numbers for simple averaging) are incorrect
- Condiments are not entered as menu items, e.g., mayonnaise, mustard and/or catsup for hamburgers
- Menu item left off of the nutrient analysis, e.g., bun for hamburger

Reminders:

- Carefully select the correct recipe from the database. Make sure that all recipes reflect the currently purchased food items.
- Choose the correct portion size.
- Make sure the numbers for planned production or for simple averaging are correct.
- Review data entry to check for all menu items and condiments before saving menu.

